

CLAIMS

What is claimed is:

- 1 1. An application programming interface for providing data mining functionality
- 2 comprising:
- 3 a first layer providing an interface with an application program; and
- 4 a second layer implementing data mining functionality, the second layer
- 5 comprising:
- 6 a data mining object repository maintaining data mining metadata,
- 7 a plurality of data mining project objects, each data mining project
- 8 object containing data mining objects created and used by a user,
- 9 a plurality of data mining session objects, each data mining session
- 10 object containing data mining processing performed on behalf of a user,
- 11 a plurality of data mining tables, each data mining table mapping a
- 12 table or a view in a database,
- 13 a plurality of data transformation objects, each data transformation
- 14 object defining computations or manipulations to be performed on data in the
- 15 database,
- 16 a plurality of data mining models, each data mining model
- 17 implementing conditions and decisions, and

1 a plurality of data mining result objects, each data mining result object
2 generated as a result of scoring or analyzing a data mining model or an input
3 dataset.

1 2. The application programming interface of claim 1, further comprising a
2 plurality of data mining settings objects, each data mining settings object specifying
3 a type of model to build and function and model building algorithm specific
4 parameters.

1 3. The application programming interface of claim 2, wherein the first layer is a
2 client-side layer operable to execute on a client computer system.

1 4. The application programming interface of claim 3, wherein the second layer
2 is server-side layer operable to execute on a server computer system.

1 5. The application programming interface of claim 4, wherein the first layer and
2 the second layer are implemented in the Java programming language.

1 6. The application programming interface of claim 5, wherein the database
2 comprises training data to be used to train the data mining models.

1 7. The application programming interface of claim 6, wherein the database
2 comprises test and evaluation data to be used to test and evaluate the data mining
3 models.

1 8. The application programming interface of claim 7, wherein the database
2 comprises scoring data to be used to score the data mining models.

1 9. The application programming interface of claim 8, wherein each data mining
2 project object maintains a name space within which data mining objects are named.

1 10. The application programming interface of claim 9, wherein a data mining
2 project object may be shared among users.

1 11. The application programming interface of claim 10, wherein the data mining
2 table objects are included in the data mining object repository.

1 12. The application programming interface of claim 11, wherein each data
2 mining table includes a set of columns of data mining data and associated metadata.

1 13. The application programming interface of claim 12, wherein each data
2 mining transformation object performs data transformations on a data mining table, a

3 data column in a data mining table, a data row in a data mining table, or a value in a
4 data row or a data column in a data mining table.

1 14. The application programming interface of claim 13, wherein each data
2 mining transformation object comprises metadata.

1 15. The application programming interface of claim 14, wherein each data
2 mining settings object comprises metadata.

1 16. The application programming interface of claim 15, wherein each data
2 mining model comprises metadata.

1 17. The application programming interface of claim 16, further comprising a
2 plurality of schema view objects, each schema view object providing access to a data
3 table in the data mining object repository.

1 18. A computer program product for use in an electronic data processing system,
2 comprising:
3 a computer readable medium;

4 computer program instructions, recorded on the computer readable medium,
5 executable by a processor, for implementing an application programming interface
6 for providing data mining functionality comprising:
7 a first layer providing an interface with an application program; and
8 a second layer implementing data mining functionality, the second layer
9 comprising:
10 a data mining object repository maintaining data mining metadata,
11 a plurality of data mining project objects, each data mining project
12 object containing data mining objects created and used by a user,
13 a plurality of data mining session objects, each data mining session
14 object containing data mining processing performed on behalf of a user,
15 a plurality of data mining tables, each data mining table mapping a
16 table or a view in a database,
17 a plurality of data transformation objects, each data transformation
18 object defining computations or manipulations to be performed on data in the
19 database,
20 a plurality of data mining models, each data mining model
21 implementing conditions and decisions, and
22 a plurality of data mining result objects, each data mining result object
23 generated as a result of scoring or analyzing a data mining model or an input
24 dataset.

1 19. The application programming interface of claim 16, further comprising a
2 plurality of data mining settings objects, each data mining settings object specifying
3 a type of model to build and function and model building algorithm specific
4 parameters.

1 20. The computer program product of claim 17, wherein the first layer is a client-
2 side layer operable to execute on a client computer system.

1 21. The computer program product of claim 18, wherein the second layer is a
2 server-side layer operable to execute on a server computer system.

1 22. The computer program product of claim 19, wherein the first layer and the
2 second layer are implemented in the Java programming language.

1 23. The computer program product of claim 20, wherein the database comprises
2 training data to be used to train the data mining models.

1 24. The application programming interface of claim 21, wherein the database
2 comprises test and evaluation data to be used to test and evaluate the data mining
3 models.

1 25. The computer program product of claim 22, wherein the database comprises
2 scoring data to be used to score the data mining models.

1 26. The computer program product of claim 23, wherein each data mining project
2 object maintains a name space within which data mining objects are named.

1 27. The computer program product of claim 24, wherein a data mining project
2 object may be shared among users.

1 28. The computer program product of claim 25, wherein the data mining table
2 objects are included in the data mining object repository.

1 29. The computer program product of claim 26, wherein each data mining table
2 includes a set of columns of data mining data and associated metadata.

1 30. The computer program product of claim 27, wherein each data mining
2 transformation object performs data transformations on a data mining table, a data
3 column in a data mining table, a data row in a data mining table, or a value in a data
4 row or a data column in a data mining table.

1 31. The computer program product of claim 30, wherein each data mining
2 transformation object comprises metadata.

1 32. The computer program product of claim 31, wherein each data mining
2 settings object comprises metadata.

1 33. The computer program product of claim 32, wherein each data mining model
2 comprises metadata.

1 34. The computer program product of claim 33, further comprising a plurality of
2 schema view objects, each schema view object providing access to a data table in the
3 data mining object repository.

1 35. The computer program product of claim 34, further comprising a plurality of
2 data mining settings objects, each data mining settings object specifying parameters
3 for building a particular type of data mining model.

1 36. A system for implementing an application programming interface for
2 providing data mining functionality comprising:

3 a processor operable to execute computer program instructions; and

4 a memory operable to store computer program instructions executable by
5 the processor, the computer program instructions implementing an application
6 programming interface for providing data mining functionality comprising:

7 a first layer providing an interface with an application program; and

8 a second layer implementing data mining functionality, the second layer
9 comprising:

10 a data mining object repository maintaining data mining metadata,

11 a plurality of data mining project objects, each data mining project
12 object containing data mining objects created and used by a user,

13 a plurality of data mining session objects, each data mining session
14 object containing data mining processing performed on behalf of a user,

15 a plurality of data mining tables, each data mining table mapping a
16 table or a view in a database,

17 a plurality of data transformation objects, each data transformation
18 object defining computations or manipulations to be performed on data in the
19 database,

20 a plurality of data mining models, each data mining model
21 implementing conditions and decisions, and

22 a plurality of data mining result objects, each data mining result object
23 generated as a result of scoring or analyzing a data mining model or an input
24 dataset.

1 37. The system of claim 32, further comprising a plurality of data mining settings
2 objects, each data mining settings object specifying a type of model to build and
3 function and model building algorithm specific parameters.

1 38. The system of claim 33, wherein the first layer is a client-side layer operable
2 to execute on a client computer system.

1 39. The system of claim 34, wherein the second layer is server-side layer operable
2 to execute on a server computer system.

1 40. The system of claim 35, wherein the first layer and the second layer are
2 implemented in the Java programming language.

1 41. The system of claim 36, wherein the database comprises training data to be
2 used to train the data mining models.

1 42. The system of claim 37, wherein the database comprises test and evaluation
2 data to be used to test and evaluate the data mining models.

1 43. The system of claim 38, wherein the database comprises scoring data to be
2 used to score the data mining models.

1 44. The system of claim 39, wherein each data mining project object maintains a
2 name space within which data mining objects are named.

1 45. The system of claim 40, wherein a data mining project object may be shared
2 among users.

1 46. The system of claim 41, wherein the data mining table objects are included in
2 the data mining object repository.

1 47. The system of claim 42, wherein each data mining table includes a set of
2 columns of data mining data and associated metadata.

1 48. The system of claim 43, wherein each data mining transformation object
2 performs data transformations on a data mining table, a data column in a data mining
3 table, a data row in a data mining table, or a value in a data row or a data column in a
4 data mining table.

1 49. The system of claim 48, wherein each data mining transformation object
2 comprises metadata.

1 50. The system of claim 49, wherein each data mining settings object comprises
2 metadata.

1 51. The system of claim 50, wherein each data mining model comprises
2 metadata.

1 52. The system of claim 51, further comprising a plurality of schema view
2 objects, each schema view object providing access to a data table in the data mining
3 object repository.